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Notice of Oral *Ex Parte* Presentation

May 16, 2005

ORIGINAL

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, DC 20554

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MAY 16 2005

Federal Communications Commission  
Office of Secretary

Re: In the Matter of  
Unlicensed Operation in the TV Broadcast Bands, ET Docket No. 04-186; and  
Additional Spectrum for Unlicensed Devices Below 900 MHz and the 3 GHz  
Band, ET Docket No. 02-380.

Dear Ms. Dortch:

On May 12, 2005, Marjorie Dickman, Jeffrey Schiffer, and Chris Rogers of Intel Corporation met with Deborah Klein, Rick Chessen, Keith Larson, John Wong, Wayne McKee, John Gabrysch, Sarah Mahmood, and Paul Gunia of the Media Bureau regarding the above proceedings.

In the course of this meeting, Intel advocated allowing unlicensed wireless devices to operate on unused frequencies in the TV broadcast spectrum. Intel presented slides on the significant amount of "white space" in the TV bands; the lack of harmful interference that would be created by unlicensed devices operating in this "white space;" the various effective methods for avoiding harmful interference in the TV bands; the substantial benefits of expeditiously implementing the FCC's proposal; and the next steps in this proceeding (slides attached).

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Pursuant to Section 1.1206 of the Commission's Rules, 47 C.F.R. § 1.1206, a copy of this letter is being provided to each of the abovementioned parties. Please contact the undersigned with any questions in connection with this filing.

Respectfully submitted,

/s/ Marjorie J. Dickman

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Marjorie J. Dickman  
Senior Attorney, Government Affairs  
Intel Corporation

Att: "FCC/Intel Meeting," Unlicensed Operation in the TV Broadcast Bands, ET  
Docket Nos. 04-186, 02-380, May 12, 2005 (slide set).

cc: Deborah Klein  
Rick Chessen  
Keith Larson  
John Wong,  
Wayne McKee  
John Gabrysch  
Sarah Mahmood  
Paul Gunia

# FCC/Intel Meeting

Unlicensed Operation  
in the TV Broadcast Bands

ET Docket Nos. 04-186, 02-380

May 12, 2005

# Overview

- Status of Vacant TV Channels proceeding
- Significant “White Space” in TV Bands
- No Harmful Interference by Unlicensed Devices Operating in “White Space”
- Various Effective Methods for Avoiding Harmful Interference
- Benefits of Expeditiously Implementing FCC Proposal
- Next Steps

# Status of Vacant TV Channels Proceeding

- NPRM (5/04):  
FCC proposed to allow unlicensed devices to operate on unused frequencies (or “white space”) in TV band channels 2–51
- Comments (11/04), Reply (1/05):  
Intel strongly supports FCC proposal
- No further FCC action to date

# Significant “White Space” in TV Bands

- At almost *any* geographic location across U.S., there is significant “white space” in TV chs 20–51 totaling 36+ MHz (or 6+ TV chs)
  - 36 MHz (or 6 TV chs) are vacant in *highly congested* San Fran [Intel]
  - 80 MHz (on average) are vacant across U.S. [Adaptrum]
  - Significant underutilization of TV bands [MSFT, Wi-Fi Alliance, Shared Spectrum]
- “White space” is more than sufficient bandwidth to accommodate a variety of new wireless broadband solutions
  - For ex, 36 MHz is more than adequate to support 2+ WISPs
- Significant amount of “white space” will only increase as analog TV stations are soon phased out (and DTV stations are repacked)

# No Harmful Interference by Unlicensed Devices Operating in “White Space”

- **No harmful interference to TV reception**
  - No harmful interference to authorized services from out of band emissions
  - Potential for direct pick-up interference in receiving equipment is highly improbable
  - No harmful interference to cable or satellite TV
- **No harmful interference to TV translators or cable headends**
- **No harmful interference to wireless microphones**
  - Most wireless microphones operate on unlicensed basis so are not even entitled to secondary protected status

# FCC Has Proposed Various Effective Methods for Avoiding Harmful Interference

- Low power “personal/portable” devices (WiFi card in laptops; wireless LAN in homes)
  - Sensing method (uses “cognitive” or “smart” technology)
    - Device can determine location, detect spectrum use by others, change frequency, adjust output power, and alter transmission parameters
    - Proven effective [demo'd by Shared Spectrum; built into products by Shure and others]
  - Control signal method
    - Device only operates if it “hears” control signal
    - Highly reliable
- High power “fixed/access” devices (fixed devices that provide wireless BB access)
  - Professional installation/GPS method



# Benefits of Expeditiously Implementing FCC Proposal

- Produces significant consumer benefits
- Incentivizes acceleration of DTV transition

# Produces Significant Consumer Benefits

- TV bands offer highly favorable propagation characteristics (vs. operation at 1.9 GHz or 2.5 GHz)
  - Greater range of operation (incl'dg ability to pass thru buildings, weather, foliage)
  - 2 – 4 times the signal coverage
  - $\frac{1}{2}$  –  $\frac{1}{4}$  of the capital expenditure
- What this means for consumers
  - Increased broadband competition → lower prices, improved service
  - Better broadband service in less densely populated and bad weather areas
  - First broadband service in many rural and underserved areas

# Incentivizes Acceleration of DTV Transition

- Multi-party incentives and benefits
  - **Broadcasters**: Opportunity to provide new broadcast TV functionalities
    - Additional back-channel for true two-way over-the-air digital data service [APTS]
    - Off-air DTV receivers in more CE equipment such as PCs, laptops, PDAs [APTS]
  - **Manufacturers**: Opportunity to provide complementary and ancillary products capable of exploiting synergisms with broadcast TV services
  - **Consumers**: New functionalities for broadcast TV
- Realization of the DTV transition

# Next Steps

- FCC Agenda – 2Q 2005
- New Rules – 4Q 2005
  - Modify Part 15 rules to allow new wireless devices to operate on unused frequencies (or “white space”) in TV band channels 2–51
  - At minimum, Part 15 rules should be modified to enable wireless broadband operation in underutilized portions of TV bands
- Intel Priority – What can Intel do to help?